July 19, 2002

MEMORANDUM FOR: Monroe Rivers
Project Director, State Advisors Group

FROM: Charles W. Challstrom
Director, National Geodetic Survey

SUBJECT: INSTRUCTIONS: Field Reconnaissance for
KANSAS FBN, 2002, & NEODESHA(2) CORS
(GPS-1726)
Task Numbers: 8K6D2000 (FBN)
8K6D4000 (CORS)

BACKGROUND:

The National Geodetic Survey (NGS), in accordance with the NGS Strategic Plan, is engaging in a campaign of observing stations of the Federal Base Network (FBN) to complete the ellipsoidal and orthometric height components of the FBN. Requirements for field reconnaissance to support the upcoming survey in Kansas are outlined below.

The FBN in Kansas consists of 36 stations (list and sketch separate) that must be reconned. If an FBN station is not recoverable, a nearby substitute station (preferably a bench mark) suitable for GPS should be recovered and Doug Hendrickson, N/NGS21, informed.

For WAAS reference marks ZKC A (PID AA5898) and ZKC B (PID AA5899), only one of these will be occupied as an FBN station. Thus, reconnaissance is required to determine which is more suitable as such (i.e., check accessibility, blockage, etc.).

Four additional first- or second-order bench marks (to serve as bench mark ties) need to be reconned as well. The bench mark reconnaissance breaks down as follows:

(1) in the area formed by stations K60 A AZ MK (K60A), GLD C (GLDC), and OAKPORT 1989 (OAKP);

(2) in the area formed by stations SMITH CENTER (SMIT), MEADES RANCH RESET (MEAD), and CNK A (CNKA);

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(3) in the area formed by stations CNK A (CNKA), 3JC B (3JCB), and ELK RESET (ELKR); and

(4) in the area formed by stations 3JC B (3JCB), ELK RESET (ELKR), and ATCHPORT (ATCH).

Also, up to 14 network stations will be added to the project (in order to check ellipsoid heights versus leveling) and require reconnaissance as well. They are indicated on the station list.

Further, up to six gravity stations may be added to the project and require reconnaissance. They are also indicated on the station list.

Reconnaissance is also required for establishing reference marks at the Neodesha(2) Continuously Operating Reference Station (CORS) site in Cherryvale. Instructions for this are provided at the end of this document.

Lastly, since Central Temporary CORS (CTCORS) throughout the state will be used in the GPS portion of the project, the reconn party should note which stations are suitable to serve as such (i.e., a receiver must be able to be left unattended for 24 hours a day for a several-day period).

RECONNAISSANCE SPECIFICATIONS:

The NGS State Advisor in Kansas is the coordinator for the project:

Monroe Rivers
KS DOT, Docking State Office Building
Survey Section, Room B-50
915 Harrison Street
Topeka, Kansas 66612-1568
Telephone: (785) 296-6835
Fax: (785) 296-6812
E-mail: Monroe.Rivers@noaa.gov

Reconnaissance shall consist of a review of existing control, field recovery and mark maintenance, station selection, and compilation of updated station descriptions in standard NGS Blue Book format using WDDPROC software. Include the name, address, and, if public ownership, the telephone number of the responsible party. Do not include the telephone numbers of private property owners.

LIAISON:

For concerns regarding survey field operations, contact:

William T. McLemore, Jr.
Chief, Field Operations Branch, N/NGS41
SSMC3/Station 8564
1315 East-West Highway
Silver Spring, MD 20910-3282
Telephone: (301) 713-3215, ext. 117
FAX: (301) 713-4327
E-mail: Bill.Mclemore@noaa.gov

For concerns regarding survey design or specifications, contact:

Stephen J. Frakes (Doug Hendrickson)
Chief, Project Development Branch, N/NGS21
SSMC3/Station 8853
1315 East-West Highway
Silver Spring, MD 20910-3282
Telephone: (301) 713-3194, ext. 111 (ext. 127)
FAX: (301) 713-4316
E-mail: Steve.Frakes@noaa.gov
(Doug.Hendrickson@noaa.gov)

DATA:

All records for this project shall be archived under the title "KANSAS FBN, 2002, & NEODESHA(2) CORS" and accession number GPS-1726. Digital files shall be archived under filename "ksro072d.988".

REPORTS:

A summary of reconnaissance activities shall be included in the final project report.

ADDRESSES:

Keep N/NGS41 informed of the party's post office, physical address, and telephone number at all times.

PUBLICITY:

See NGS Operations Handbook, Section 1.4.1.

EXPENSES:

FBN expenses for this project will be charged to task number 8K6D200-0. CORS expenses will be charged to task number 8K6D4000.

TRAVEL:

Travel and per diem are authorized in accordance with Federal Travel Regulations, Part 301-11, Per Diem Expenses, and Appendix A to Chapter 301. Current per diem rates were effective October 1, 2001.

ACKNOWLEDGEMENT:

Please acknowledge receipt of these instructions in your Monthly Report.

Attachments

cc: N/NGS - D. Zilkoski*
N/NGS - S. Misenheimer*
N/NGS - D. Milbert
N/NGS1 - G. Mitchell
N/NGS11 - S. Cofer
N/NGS21 - S. Frakes
N/NGS21 - R. Anderson
N/NGS21 - C. Craig*
N/NGS21 - D. Hendrickson*
N/NGS22 - T. Soler
N/NGS3 - J. Bailey
N/NGS4 - E. Wade
N/NGS4 - D. Hoar
N/NGS41 - W. McLemore
N/NGS41 - J. Blackwell
N/NGS6 - M. Chin
N/NGS6 - F. Marion
FGCS Members*
Seth Gutman, NOAA
Kirk Holub, NOAA
Mike Foy, NOAA

* first page only

NEODESHA(2) CORS RECONNAISSANCE INSTRUCTIONS

GENERAL:

The National Geodetic Survey (NGS) is establishing two reference marks at the Neodesha(2) Continuously Operating Reference Station (CORS) site in Cherryvale, Kansas. These stations will be tied to the CORS antenna at the site, as well as to the local Federal Base Network/ Cooperative Base Network (FBN/CBN) through GPS observations. Thus, reconnaissance is required to establish two reference marks suitable for GPS occupation at the site.

Since the reference marks will be tied to the local FBN/CBN, it is also necessary to reconn the nearest FBN/CBN station and a backup station. The nearest FBN/CBN station is NDSK B (a CBN)(PID AE5433) and the backup station is NDSK A (a FBN)(PID AE5432).

PURPOSE:

The subsequent GPS project will provide reference station coordinates relative to the local FBN/CBN, thus reducing the potential for inconsistencies between the CORS site and the local network. They will also provide a check on the FBN/CBN relative to the CORS coordinates. Further, the on-site reference marks will provide a very accurate tie to the antenna as an aid to repositioning the antenna should that become necessary.

MARK SETTING

The NGS Integrated Data Base (IDB) shows no marks within 1 km of the CORS. Thus, NDS1 A and NDS1 B must be sited and set at the site.

In general, the two CORS reference marks must be suitable for GPS occupation and be located within 1 km of the CORS antenna site. They must be at least B-stability, with A-stability preferred. Preference should be given to existing marks with vertical control. The minimum quality mark set shall be a GPS 3-D monument. The CORS marks should be set close to the CORS antenna. These marks are not established to obtain azimuth with optical surveying equipment. The purpose of these marks is to provide redundant reference marks for referencing the CORS antenna at the facility.

CONTACT:

For the Neodesha(2) CORS, contact the Point-of-Contact 3 or 4 days before arriving at the CORS site. The point of contact is:

Seth Gutman
NOAA ERL/FSL/DD
325 Broadway R/E/FS3
Boulder, Colorado 80303
Telephone: (303) 497-7031 or (303) 497-6200
FAX: (303) 497-6014
E-mail: gutman@fsl.noaa.gov

The secondary contacts for the Neodesha(2) CORS site (at the same address as Mr. Gutman) are:

Kirk Holub or Mike Foy
Telephone: (303) 497-6642 or (303) 497-6832
FAX: (303) 497-6014
E-mail: holub@fsl.noaa.gov or foy@fsl.noaa.gov